

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Application No.: 10/024,215

PATENT APPLICATION  
Atty. Docket No.: Q67860

**REMARKS**

Claims 1 – 24 were previously pending. Claims 25 – 32 are herein added. Accordingly, claims 1 – 32 are presently pending.

**I. Rejection of Claims 2 and 6 Under 35 U.S.C. § 112, Second Paragraph**

Claims 2 and 6 stand rejected under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite. This rejection is respectfully traversed as follows.

The Examiner states that because “storage means” are allegedly not illustrated in the figures that such gives rise to indefiniteness. Applicant respectfully suggests that the Examiner perhaps meant to object to claims 2 and 6 under 37 C.F.R. § 1.83(a) (which requires all of the features of the claims to be shown in illustration). In any event (whether claims 2 and 6 are rejected under either of § 112 or rule 1.83), the Examiner’s attention is respectfully drawn to element 200 of Applicant’s Figure 3.

Element 200 is an example of the storage means recited in claims 2 and 6, and is described at the bottom of page 25 of Applicant’s specification. Therefore, because storage buffer 200 is appropriately illustrated in Figure 3, the Examiner is courteously requested to reconsider and withdraw this rejection.

**II. Rejection of Claims 1 – 24 Under 35 U.S.C. § 102 in View of U.S.P. No. 5,990,957 to Ryoo**

Claims 1 – 24 are rejected under 35 U.S.C. § 102 in view of U.S.P. No. 5,990,957 to Ryoo. This rejection is respectfully traversed for the following reasons.

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**A. Independent Claims 1, 2, 5 and 6**

Applicant's attorneys have carefully analyzed the Examiner's comparison of the features in the Ryoo reference in relation to the features of Applicant's independent claims. Applicant's attorneys believe that the Examiner's analysis is in error for at least the following reasons. Specifically, at least the following subject matter as recited in Applicant's independent claims is absent from the references cited by the Examiner: i) an area calculating means and ii) calculating both uncoded VOP allocatable bit numbers and the number of generated bits for the encoded VOPs. These issues are discussed in turn, below.

**i. Area Calculating Means**

Applicant's independent claims 1, 2, 5 and 6 each include the subject matter of an area calculating means. Claims 1 and 2 each further include the subject matter of the area calculation means calculating the area of the object in each Video Object Plane (VOP) based on shape information data. Claims 5 and 6 each further include the subject matter of the area calculating means calculating the area of the section in each frame based on section information data.

The Examiner compares elements 21 and 22 of Ryoo's Figure 2 to the previously noted features of Applicant's identified independent claims. The Examiner also compares the text of Column 5, line 44, to Column 6, line 43 (identified in the instant Office Action as "col. 5, line 44-col.5, line 43"), to the above-identified features of Applicant's noted claims. Applicant's attorneys respectfully suggest that this comparison is untenable.

Applicant's claims 1, 2, 5 and 6 each require a calculation of area. Calculation of an area will vary based upon shape. A hypothetical example states that the calculation of the area of a rectangle is found by multiplying the length times the width.

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Ryoo's complexity classifier 21 and color sensitivity classifier 22 (*see* Fig. 2) are unconcerned with the calculation of an area. Using the same simple hypothetical of a rectangle, Ryoo's elements 21 and 22 will not find the area of the rectangle. Instead (as described at Column 5, lines 45 – 49), Ryoo's complexity classifier "calculates texture masking obtained by combining spatial frequency and color tolerance for each macroblock in the VOP and classifies the complexity of the module." That is, Ryoo's complexity classifier would analyze the hypothetical rectangle in terms of "spatial frequency" and "color tolerance," and NOT in terms of area.

While the phrase "spatial frequency" imparts some meaning relating to "space," it is an untenable position to assert that the phrase equates to a calculation of area. Indeed, the phrase "spatial frequency" is used by the ordinarily skilled artisan to describe the frequency of a sinusoidal waveform in space,<sup>1</sup> and absolutely does nothing to so much as infer or suggest a calculation of area.

Additionally, independent claims 1 and 2 each recite that the calculation of area is made for each VOP. Given this, the Ryoo reference, in addition to being deficient as to the area calculation means as explained above, is further deficient because the Ryoo reference teaches that the complexity classifier 21 only analyzes macroblocks of a VOP.

Assuming for argument's sake that Ryoo somewhere taught that element 21 somehow calculated area (which Ryoo absolutely fails to do, as explained above), Ryoo is still deficient because element 21 only analyzes macroblocks in each VOP, and nowhere in the Ryoo reference

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<sup>1</sup> See, e.g., [www.cs.man.ac.uk/teaching/electronics/CS325/spatial\\_freq.html](http://www.cs.man.ac.uk/teaching/electronics/CS325/spatial_freq.html) - 4k.

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is there disclosure or suggestion that the analysis for each macroblock is cumulatively added for each VOP (which would be required to meet the recitation of Applicant's claims 1 and 2, because these claims require that area is calculated for each VOP (as compared to portions of each VOP).)

**ii. *Calculating Both Uncoded VOP Allocatable Bit Numbers and the Number of Generated Bits for the Encoded VOPs***

The Examiner compares element 31 of Ryoo's Fig. 2 and Col. 10, line 66, to Col. 11, line 44, to Applicant's recital of calculating the total number of allocatable bits for uncoded VOPs, and the number of generated bits for the encoded VOPs (both within a certain period of time). Applicant's attorneys respectfully present that the Ryoo reference fails to teach or suggest the calculation of both the allocatable bits for *uncoded* VOPs and the number of bits for the *encoded* VOPs.

By way of explanation, Ryoo's target bit rate is described in Cols. 9 and 10. At Col. 9, lines 46 – 48, the reference explicitly states that the bit rate is controlled based on the texture bits, the motion bits, and the shape bits. As clearly shown in Fig. 1, the texture bits, motion bits and shape bits are ALL encoded bits.

In contrast, Applicant's independent claims include the feature of a calculation of the total number of allocatable bits for uncoded VOPs. This difference is clearly shown in Fig. 2, for example, where the shape information data branches off prior to the encoding means 101 to be sent to the area calculating means 105. This branching off prior to encoding allows for an estimation of the number of generated bits for the uncoded VOPs based on the predictive area calculating parameter and the predictive bit number calculating parameter. The Ryoo reference is absolutely deficient as to these features.

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Therefore, because a § 102 rejection is only proper where the prior art teaches all of the features of Applicant's claims (in as much detail as recited by the claims; *see* M.P.E.P. § 2131), and further because the Ryoo reference is absolutely deficient at least as to the aspect of Applicant's claims including the features of i) a calculation of area and ii) the calculation of the total number of allocatable bits for uncoded VOPs (as explained above), the Examiner is courteously asked to remove the instant rejection of claims 1, 2, 5 and 6.

**B. Claims Dependent Upon One of Independent Claims 1, 2, 5 and 6**

Applicant's attorneys assert that dependent claims 3, 4, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 are patentable at least by virtue of their respective dependencies upon one of independent claims 1, 2, 5 and 6.

**C. Independent Claim 19 and its Dependencies, Claims 21 and 23**

Applicant's attorneys assert that independent claim 19 and its dependent claims (claims 21 and 23) are patentable for the reasons explained above in Part II(A)(ii) of this paper. In brief, Ryoo fails to teach or suggest the calculation of the total number of allocatable bits for uncoded VOPs (as explained above). Accordingly, the Examiner is respectfully requested to reconsider and withdraw this rejection.

**III. Rejection of Claims 20 and 21 Under 35 U.S.C. § 102 in View of U.S.P. No. 5,847,766 to Peak**

Claims 20 and 21 are rejected under 35 U.S.C. § 102 in view of the Peak reference (U.S.P. No. 5,847,766). For the following reasons, this rejection is respectfully traversed.

Applicant's attorneys assert that independent claim 20 and its dependent claims (claims 22 and 24) are patentable for the reasons explained above in Part II(A)(ii) of this paper. Further,

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claim 21, as dependent on claim 19, is asserted as being patentable for including the subject matter discussed in Part II(A)(ii) of this paper. As discussed above, the Ryoo reference is deficient. The Peak reference is similarly deficient. Applicant's attorneys have carefully reviewed the Peak reference (including the Examiner's citations), and present that the reference is deficient for at least reasons similar to the reasons finding the Ryoo deficient in teaching or suggesting the calculation of the total number of allocatable bits for uncoded VOPs (as explained above). Accordingly, the Examiner is respectfully requested to reconsider and withdraw this rejection.

**IV. Rejection of Claims 2, 4, 6, 9, 10, 12, 14, 16, 18, 20, 22 and 24 Under 35 U.S.C. § 102 in View of U.S.P. No. 6,654,417 to Hui**

Applicant's attorneys have also reviewed the Hui reference (U.S.P. No. 6,654,417) cited by the Examiner in the instant Office Action and find this reference to be likewise deficient in comparison to the Ryoo and Peak references, as explained in both Parts II and III of this paper. Accordingly, claims 2, 4, 6, 9, 10, 12, 14, 16 and 18 are asserted as patentable at least for reasons explained in both sub-parts (i) and (ii) of Part (II)(A), and claims 20, 22 and 24 are asserted as patentable at least for reasons explained in sub-part (ii) of Part (II)(A) of this paper. Accordingly, the Examiner is courteously asked to reconsider and withdraw this rejection.

**V. New Claims 25 - 33**

New independent claims 25 and 29 recite (among other things) a method and apparatus, respectively, for: i) computing the area of an object based on shape, and ii) predicting a bit number to be generated based on a change of the computed area over time. As explained in Part (II)(A)(i), above, the cited art is deficient in teaching or suggesting calculation of an area based

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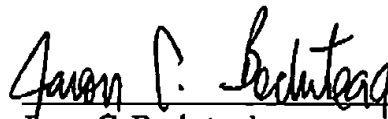
on shape. The prior art is further deficient for failing to teach or suggest predicting a bit number to be generated based on a change of the computed area over time. In view of the noted deficiencies of the prior art, independent claims 25 and 29 are asserted as patentable. Additionally, dependent claims 26 – 28 and 30 – 32 are also asserted as patentable at least by virtue of their respective dependencies.

**VI Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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MOUNTAIN VIEW OFFICE

**23493**

CUSTOMER NUMBER

Date: October 15, 2004

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this AMENDMENT UNDER 37 C.F.R. § 1.111 is being facsimile transmitted to the U.S. Patent and Trademark Office this 15th day of October, 2004.



Mariann Tam